

In the Specification:

Please insert at Page 1, line 4 the following paragraph:

RELATED PATENT APPLICATION

This application is a National Phase Application of PCT/IL2003/000587 having International Filing Date of 15 July 2003, which claims priority from U.S. Provisional Patent Application No. 60/396,010 filed 16 July 2002.

Please amend the paragraph beginning at Page 4, line 22 as follows:

~~Figure 1 shows~~ Figures 1A-E show the immunophenotype of bone marrow-derived mononuclear cells. Mononuclear cells (MNCs) were obtained from fresh human BM by separation on a density-gradient. Aliquots of 1×10^6 cells were stained with the indicated mouse anti-human antibodies. The percent (%) of cells in the quadrants were determined.

Please amend the paragraph beginning at Page 4, line 27 as follows:

~~Figure 2 shows~~ Figures 2A-C show in vitro differentiation of expanded hMSCs isolated with CD105 microbeads to osteogenic lineage. A: Alkaline phosphatase activity in cell lysates was assayed at 1, 2, and 3 weeks after the addition of osteogenic supplement. Activity was assessed as the release of *p*-nitrophenyl per minute normalized to total cell protein (in micrograms). B: Calcium deposition measured in cell lysates, assessed as the formation of Calcium-Cresolphthalein Complexon complex, and expressed as optical density (OD) at 575 nm, which is directly proportional to the calcium concentration in the sample. Note significant increase (* $P < 0.05$) in the cells cultured with osteogenic supplement (+Suppl.) compared to the cells cultured without osteogenic supplement (-Suppl.). The bars represent the mean (\pm SEM) ALP (A), or calcium deposition (B), from three individual wells.

Please amend the paragraph beginning at Page 5, line 6 as follows:

~~Figure 3 demonstrates~~ Figures 3A-B demonstrate morphology and flow cytometry analysis of culture-expanded CD105+ cells. The cells were isolated from bone marrow using microbeads coupled-antibody against CD105, plated in media and

maintained in culture as indicated. Photomicrograph of 10-day cultured CD105+ cells (A, X 40), and whole BM-MNCs (B, X 40). C: Expression of surface molecules on culture expanded (passage 3-5) CD105+ cells.

Please amend the paragraph beginning at Page 5, line 12 as follows:

~~Figure 4 demonstrates~~ Figures 4A-F demonstrate the in vivo osteogenic potential of fresh BM-derived CD105+ cells. A 5-mm-diameter circular defect was created in the radius of 6-8-week-old male CD-1 nude mice. Non-cultured, fresh BM-derived CD105+ cells (isolated by the CD105 microbeads) were mounted on collagen sponges and transplanted in the defect site. Twenty days post transplantation, mice were sacrificed, calvariae dissected from other soft tissues, analyzed by x-ray, and histologic analysis for evidence of new bone formation. A, B: X-rays of the calvariae specimens transplanted with BM-CD105+ (A), and BM-CD105- cells (B), note radio-opaque region in the defect transplanted with BM-CD105+ cells (A, doubled arrows). C, D, E, F: Micrograph of calvariae specimens transplanted with BM-CD105+ cells (C, D), and BM-CD105- cells (E, F). Note newly formed bone on the margins of the defect in specimen transplanted with BM-CD105+ cells (arrows).

Please amend the paragraph beginning at Page 5, line 24 as follows:

~~Figure 5 demonstrates~~ Figures 5A-D(2) demonstrate engraftment and differentiation of non-cultured hMSCs transplanted at an ectopic site. Non-cultured hMSCs, isolated by the RosetteSepTM were labeled with the fluorescent cell tracer, DiI and implanted with rhBMP. Two weeks following transplantation, implants were harvested, fixed and embedded in OCT. A&B: H&E staining of sections of these implants revealed newly formed cartilage and bone (arrowheads), mainly at the periphery of the implant (original magnification: A: 10 X, B: 40 X). DiI-labeled cells with chondrocyte (D1, arrow) and osteoblast (D2, doubled arrow) morphology were evident, as well.